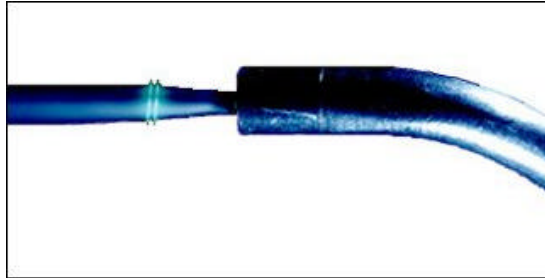


FACT SHEET

NASA Licenses First KSC Technology to Foreign Company



A NASA-patented supersonic cleaning system technology developed at Kennedy Space Center has been transferred to a Dutch company, the KSC Technology Programs and Commercialization Office has announced. This is the first time in KSC history that a U.S. patent owned by NASA has been licensed to a foreign company.

Melanie Chan, Technology Programs Manager, Licensing and Dual Use, said that CryCle Cryogenic Development NV of Haarlem, The Netherlands, plans to develop and market the Gas/Liquid Supersonic Cleaning System, originally developed as a cleanliness verification tool to replace CFC-113 solvents. A formal license signing ceremony was held August 27 in the office of KSC Center Director Roy Bridges. CryCle Founder and Director Theodorus van Bakkum and Managing Director Aad van Rhijn visited Kennedy Space Center for the signing. Under negotiated terms of the patent license agreement, the company must substantially manufacture the system in the United States and is restricted to European marketing only.

CryCle Cryogenic is a small, high-tech, business. Van Bakkum established the company in January 1997. CryCle had instituted partnerships with several American companies for other technological development and market support. The company has successfully commercialized the Cryo-Beam™, a cutting technology that uses highly pressurized liquid nitrogen to produce a dry, cold, fine beam which gives a surface cutting or abrading action while preserving underlying material, all with zero added waste.

Van Bakkum said his company is very interested in preserving natural resources as part of its business philosophy and in conformance with strict European environmental regulations. He said KSC's cleaning system fits this category "because of the extremely low consumption of valuable potable water" since water is becoming a scarce and more expensive commodity all over the world. "The NASA technology could help save enormous amounts of water used in all kinds of cleaning processes worldwide. Instead of waterflushing for cleaning equipment, the process can be improved by using the supersonic technology, and large quantities of water will be saved in all kinds of

industries, including food, pharmaceutical, chemical, and electronics,” van Bakum explained.

The company plans to officially introduce the technology in March 2000 at the *Hannover Messe 2000*, the world's largest industrial fair in Germany, to European manufacturing and cleaning industries. The first prototype should be ready in April 2000. Van Bakum said his company estimates that it will take 2 years for the industries to convert to the supersonic cleaning system. CryCle has initiated discussions with U.S. companies that have also licensed the technology, for future cooperation in development and manufacturing, and to explore mutual market opportunities to make the supersonic cleaning technology a worldwide success, he added. There is no similar technology in Europe, and CryCle is optimistic that this will open up options in market segments outside of traditional cleaning industries. The first markets to be targeted include agriculture, food, and pharmaceuticals.

Va-Tran Systems of Chula Vista, California currently holds the U.S. patent rights and is marketing its own version of the cleaning system. Va-Tran found in further studies of the system that it is also excellent for removal of adhesive, flux, fingerprints and heavy hydrocarbon contamination. Preferred Engineering, of Danbury, Connecticut has also negotiated a license for the patent. Preferred specializes in customized solutions that support nuclear power plant refueling and maintenance.

NASA-KSC inventors Eric Thaxton, Raoul Caimi, and Gary Lin developed the technology for cleanliness verification of complex Space Shuttle mechanical and electronic parts. Caimi said the system is suitable for a variety of applications, from cleaning electronic circuit boards to scouring building exteriors.

Ron Barile, scientist with Dynacs Engineering Co., KSC Engineering Development Contractor, explained that although traditional high-pressure spray cleaning systems are often employed for cleaning various types of mechanical, electrical, and fluid components, they unfortunately use very large quantities of solvents. Dr. Barile, who has performed all of the technology's testing and verification, noted that disposal of these solvents creates an environmental problem, especially with the use of Freon 113 or other CFCs. NASA's invention overcomes the deficiencies of prior systems.

Point of Contact:

Thomas Gould

NASA – Technology Programs & Commercialization Office (YA-C1)

Kennedy Space Center, FL 32899

(321) 867-6238